

1 WILLIAM A. ISAACSON (*Pro hac vice*)
wisaacson@paulweiss.com
2 JESSICA PHILLIPS (*Pro hac vice*)
jphillips@paulweiss.com
3 PAUL, WEISS, RIFKIND, WHARTON &
GARRISON LLP
4 2001 K Street, NW
Washington, DC 20006

5
6 DONALD J. CAMPBELL (No. 1216)
djc@campbellandwilliams.com
7 J. COLBY WILLIAMS (No. 5549)
jcw@campbellandwilliams.com
8 CAMPBELL & WILLIAMS
9 700 South 7th Street
Las Vegas, NV 89101

CHRISTOPHER S. YATES (*Pro hac vice*)
chris.yates@lw.com
LATHAM & WATKINS LLP
505 Montgomery Street, Suite 2000
San Francisco, CA 94111

SEAN M. BERKOWITZ (*Pro hac vice*)
sean.berkowitz@lw.com
LATHAM & WATKINS LLP
330 North Wabash Ave, Suite 2800
Chicago, IL 60611

LAURA R. WASHINGTON (*Pro hac vice*)
laura.washington@lw.com
LATHAM & WATKINS LLP
10250 Constellation Blvd, Suite 1100
Los Angeles, CA 90067

Attorneys for Defendant Zuffa, LLC

13 **UNITED STATES DISTRICT COURT**
14 **DISTRICT OF NEVADA**

16 Cung Le, Nathan Quarry, Jon Fitch, Brandon Vera,
17 Luis Javier Vazquez, and Kyle Kingsbury on behalf
of themselves and all others similarly situated,

18 Plaintiffs,

19 v.

20 Zuffa, LLC, d/b/a Ultimate Fighting Championship
21 and UFC,

22 Defendant.
23
24
25
26
27
28

Case No.: 2:15-cv-01045-RFB-BNW

**DEFENDANT ZUFFA, LLC'S
MOTION TO EXCLUDE CERTAIN
OPINIONS OF DR. HAL J. SINGER**

HEARING REQUESTED

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GLOSSARY OF ABBREVIATIONS

For the Court's convenience in the interest of efficiency given the large number of exhibits and documents cited herein, this motion uses the abbreviations shown below. These materials are attached to the Declaration of attorney William A. Isaacson ("Decl."), filed concurrently herewith, and assigned the exhibit numbers shown below, or are publicly available at the docket number indicated below.

Document	Citation	Decl. Ex.
Order, <i>In re Google Play Store Antitrust Litig.</i> , No. 20-cv-5761 (N.D. Cal.), ECF No. 457	N/A	Ex. 19
Letter, U.S. Supreme Court (April 24, 2023)	N/A	Ex. 20
Expert Report of Prof. Robert H. Topel (Oct. 27, 2017)	TR1	Ex. 21
Prof. Robert H. Topel's Reply to the Supplemental Expert Report of Hal J. Singer (May 7, 2018)	TR3	Ex. 22
Expert Report of Paul Oyer (Oct. 27, 2017)	OR1	Ex. 23
Expert Report of Hal J. Singer (Aug. 31, 2017)	SR1	Ex. 24
Supplemental Expert Report of Hal J. Singer (Apr. 3, 2018)	SR3	Ex. 25
Excerpt of Deposition of Hal J. Singer (Sept. 27, 2017)	Singer Dep.	Ex. 26
Declaration of Gregory K. Leonard (Dec. 1, 2023)	Leonard	Ex. 27
SCImago Journal & Country Rank (accessed Nov. 30, 2023)	N/A	Ex. 28
WorldCat, Journal of Business and Economics (accessed Dec. 1, 2023)	N/A	Ex. 29
Academic Star Publishing Webpage, FAQ (accessed Nov. 30, 2023)	N/A	Ex. 30
Transcript of Class Certification Hearing Day 1 (Aug. 26, 2019)	CC1 Hrg. Tr.	ECF 724
Transcript of Class Certification Hearing Day 2 (Aug. 27, 2019)	CC2 Hrg. Tr.	ECF 726
Transcript of Class Certification Hearing Day 3 (Aug. 28, 2019)	CC3 Hrg. Tr.	ECF 730
Transcript of Class Certification Hearing Day 4 (Aug. 30, 2019)	CC4 Hrg. Tr.	ECF 734
Transcript of Class Certification Hearing Day 5 (Sept. 12, 2019)	CC5 Hrg. Tr.	ECF 741

1 Defendant Zuffa, LLC (“Zuffa”) submits this motion to exclude certain opinions of
2 Plaintiffs’ designated expert Dr. Hal J. Singer pursuant to Federal Rule of Evidence 702 and
3 *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993).

4 PRELIMINARY STATEMENT

5 Zuffa has done more to improve career opportunities for professional mixed martial arts
6 (“MMA”) athletes than any other U.S. company. Before Zuffa acquired the Ultimate Fighting
7 Championship (“UFC”) in 2001, the vast majority of states outlawed the sport of MMA, and
8 broadcasters refused to air MMA events. Decl. Ex. 21, TR1 ¶ 49. Between 2001 and 2004, UFC’s
9 owners lost nearly \$40 million from their expenditures to improve the prospects for professional
10 fighters and grow the sport of MMA. *Id.* ¶ 50. Despite those losses, UFC’s owners pressed on.
11 They paid the entire \$10 million cost of production to air *The Ultimate Fighter* in 2005 when no
12 cable network would buy it, and made countless more investments with no certainty of
13 recoupment. *Id.* ¶¶ 50-52. After years of set-backs, Zuffa’s efforts finally began to pay off:
14 consumer demand for MMA and UFC events started to increase. UFC’s payments to fighters rose
15 too. From 2005 to 2016, UFC’s compensation to fighters per-bout increased by 18% *per year*, on
16 average. *Id.* ¶ 58. And from 2011 through 2016, UFC athletes received as much as 37%, 52%, or
17 even 61% more in per-bout compensation, depending on fight performance. *Id.* ¶ 171 & Ex. 17.

18 Plaintiffs argue Zuffa should have done more. They hired Dr. Hal Singer to opine on
19 whether Zuffa’s use of exclusive contracts with fighters lasting up to thirty months caused each
20 and every UFC bout class member to receive less compensation than he or she would have
21 otherwise, and whether common evidence could establish that causal impact. Dr. Singer intends
22 to tell the jury that he performed economic tests—regressions—that are proof of anticompetitive
23 impact and confirm both of those conditions. In reality, Dr. Singer’s models are incapable of
24 answering either of those questions. His regressions do not evaluate fighters’ actual compensation,
25 and instead evaluate fighters’ compensation as a percentage of Zuffa’s event revenues. They do
26 not test whether the challenged contractual clauses harmed competition or directly assess the
27 effects of those contracts; relying instead on a distorted figure Dr. Singer calls “foreclosure share”
28 that is hard-wired to produce the negative correlation that plaintiffs are seeking to show. And his

1 regressions do not establish or measure impact on any individual fighter, even when using his
 2 “wage share” proxy for compensation and “foreclosure share” proxy for anticompetitive conduct.

3 Standard robustness checks for econometric models demonstrate that Dr. Singer’s models
 4 cannot support the opinions he has proffered. His models do not fit the facts of this case. And his
 5 opinions do not reflect a reliable application of accepted principles or methods. Numerous courts
 6 have found Dr. Singer’s work deficient for similar reasons—and another district court in the Ninth
 7 Circuit recently excluded his opinions and decertified a class even though Dr. Singer used a
 8 generally accepted economic model because his assumptions about the application of the model to
 9 the facts of that particular case were “not supported by the evidence” and did not “give the jury a
 10 sound basis on which to make a reasoned and reasonable judgment about antitrust impact and
 11 damages.” *In re Google Play Store Antitrust Litig.*, 2023 WL 5532128, at *9 (N.D. Cal. Aug. 28,
 12 2023); Decl. Ex. 19, Order, *In re Google Play Store Antitrust Litig.*, No. 20-cv-5761 (N.D. Cal.
 13 Sept. 13, 2023), ECF No. 457 (decertifying class after excluding “Dr. Singer’s pass-through
 14 formula”). His impact opinions should be excluded here as well.

15 BACKGROUND

16 Plaintiffs claim that athletes committing by contract to fight exclusively for the UFC for
 17 up to thirty months (if a one-time extension for a title-holding champion is triggered) denied rival
 18 promoters access to a critical mass of “elite” MMA fighters, limited those fighters’ options, and
 19 anticompetitively caused their compensation to be less than it would have otherwise been.¹ The
 20 facts on the ground do not support that claim. Multiple MMA promoters, including Bellator and
 21 Strikeforce, used exclusivity and champion’s clauses in their fighter contracts, because those
 22 clauses are recognized to incentivize promoters to invest for fighters’ benefit. Decl. Ex. 21, TR1
 23 ¶¶ 90-97, 107-09. Moreover, Zuffa’s payments to fighters increased during the relevant period
 24 and Zuffa paid fighters more than other MMA promoters. *Id.* ¶¶ 44, 153, 169-71, 288 & Exs. 14,
 25 17-18. For example, when Zuffa acquired Strikeforce in 2011, the compensation of Strikeforce
 26 athletes that moved to UFC increased sharply. *Id.* ¶¶ 44, 180-83 & Ex. 21. But plaintiffs proffer
 27

28 ¹ A “champion’s clause” grants Zuffa the limited opportunity to retain a current weight-class
 champion for one extension of one year or a defined number of bouts. Decl. Ex. 21, TR1 ¶ 107.

Dr. Singer to opine that these common contract clauses nonetheless suppressed fighters' compensation, according to his "impact" regression.² This motion focuses on those opinions.

Dr. Singer's Impact Opinions: Dr. Singer's impact regression is supposed to test the relationship between two novel variables: what Dr. Singer calls "fighter share" of event revenues (or "wage share" or "revenue share") and "foreclosure share." Revenue share is intended to measure the percentage of revenues from individual MMA events paid to a Zuffa fighter or to a Strikeforce fighter (before Zuffa acquired Strikeforce). *Id.* ¶ 181. Importantly, this is not a measure of fighters' actual compensation. The key independent variable on the other side of Dr. Singer's regression is foreclosure share, which is a ratio of the fighters with an exclusive Zuffa contract of thirty months (if counting the champion's clause extension), compared to all fighters that Dr. Singer finds in his alleged relevant input market. *Id.* ¶ 171. Dr. Singer took the measure a step further by weighting each fighter with his or her promoter's average pay-per-view and gate revenues for all events. *Id.* ¶¶ 170, 182.³ When Dr. Singer performed this impact regression, which included additional variables meant to control for factors that might influence a fighter's compensation, he found a negative relationship between revenue share and foreclosure share—meaning that as the revenue-weighted foreclosure share went up, the fighters' share of revenue went down. *Id.* ¶¶ 183, 187. From this result, Dr. Singer opines that Zuffa's exclusive contracts of up to thirty months (counting the champion's clause) anticompetitively harmed UFC fighters' compensation during the class period. *Id.* ¶ 183.

Professor Robert H. Topel: Dr. Robert Topel, Distinguished Service Professor of Economics at The University of Chicago Booth School of Business, analyzed Dr. Singer's model and found it fundamentally flawed in many ways. Most relevant to this motion, Prof. Topel explained that using fighters' share of event revenues, instead of their actual compensation, to

² Although plaintiffs challenge conduct other than Zuffa's contracts with fighters, Dr. Singer's "measure of economic harm" includes "only the exclusionary effects of Zuffa's Fighter contracts." Decl. Ex. 24, SR1 ¶ 187 n.456; *see also* Decl. Ex. 21, TR1 ¶ 201 ("Dr. Singer makes no attempt to establish that there was anticompetitive harm from other elements of Plaintiffs' Challenged Conduct apart from the exclusive aspect of PAR contracts . . .").

³ For a "submarket" of only the top fifteen fighters per weight class (the "headliner" submarket), Dr. Singer weighted fighters using the inverse of their rank—meaning the top fighter per weight class was deemed five times more valuable than the fifth-ranked fighter. Decl. Ex. 24, SR1 ¶ 170.

1 estimate how the challenged conduct affected fighters financially is inconsistent with generally
 2 accepted economic principles. Decl. Ex. 21, TR1 ¶¶ 124-49, 284-88. That is particularly the case
 3 here, Prof. Topel explained, because Zuffa's athletes were not paid on a percentage-of-revenue
 4 basis, the athletes' actual compensation consistently increased over the class period, and
 5 Dr. Singer's own regression estimates no harm if compensation is used instead of revenue share.
 6 *Id.* ¶¶ 146-47 & Ex. 13.⁴

7 Prof. Topel found numerous other examples proving that Dr. Singer's regression did not
 8 reliably model what was driving fighters' compensation. For example, the regression does not
 9 show any increase in revenue share in response to the fighter winning a bout, despite Dr. Singer
 10 admitting that, in the real world, the winning fighter's base pay is nearly always doubled. *Infra*
 11 p.18. Moreover, Dr. Singer's model did not control, at all, for UFC's expenditures to host,
 12 promote, and produce events, which are obvious drivers of event revenue and could exceed
 13 \$10 million for a single event. Decl. Ex. 22, TR3 ¶ 14 & Ex. 5. In other words, Dr. Singer's model
 14 failed to account for the possibility of those costs contributing to event revenue, even though the
 15 academic literature speaks to that likelihood. *See* Decl. Ex. 21, TR1 ¶¶ 133-40 & App. A; Decl.
 16 Ex. 23, OR1 ¶ 36. This omission was significant, because if event revenues increase, that
 17 mechanically causes both the fighters' revenue share to decrease and the foreclosure share to
 18 increase—creating the appearance of a negative correlation. *See infra* pp.20-21.

19 When Dr. Singer tried to correct this failing with new regression analyses during class-
 20 certification briefing by adding some annualized promotion expenses to his regression, his impact
 21 assessment was cut nearly in half. Decl. Ex. 22, TR3 ¶ 19. But even that late effort to control for
 22 known drivers of revenue was flawed because Dr. Singer used annualized expenses instead of per-
 23 event expenses, which masks how per-event expenses influence per-event revenues, and he still
 24 failed to include any measure of Zuffa's production costs. *See infra* § II(F).

25
 26 ⁴ To convert Dr. Singer's regression to a measurement of actual compensation, Prof. Topel
 27 replaced Dr. Singer's incorrect dependent variable with the natural logarithm of an athlete's
 28 compensation from an event, measured in dollars. Decl. Ex. 21, TR1 ¶ 146. Using the log of
 compensation is standard practice when estimating compensation regressions, which allows the
 regression to be informative about changes in athlete's compensation in percentage terms. *Id.*
 ¶ 146 & n.212.

1 Prof. Topel also found foundational flaws in Dr. Singer’s approach to “weighting” fighters
 2 to estimate a foreclosure share, including that use of promoter revenue in both foreclosure share
 3 *and* revenue share will “mechanically generate ‘evidence’ of anticompetitive impact, even if such
 4 impact is impossible and even if compensation of MMA fighters is increasing.” Decl. Ex. 21, TR1
 5 ¶¶ 27, 219-30; *infra* pp.20-21. As proof of this distortion in Dr. Singer’s foreclosure measure,
 6 Prof. Topel found that removing the use of revenue weighting caused the regression to indicate no
 7 harm to fighters (even when relying on Dr. Singer’s revenue-share proxy). *Id.* ¶¶ 165-67 & Ex. 16.

8 **Daubert Briefing at Class Certification:** When plaintiffs moved to certify a class, Zuffa
 9 filed a motion to exclude certain of Dr. Singer’s opinions (and other expert opinions) because they
 10 fail *Daubert* and Rule 702. Briefing was completed in 2018. ECF Nos. 524, 534, 551, 658-1, 569.

11 In September 2018, the Court denied the motion as “premature,” and instructed that it
 12 would “consider the arguments” as part of class certification, but that “the Court is not required to
 13 determine the admissibility of evidence in ruling on the Motion to Certify Class nor does such
 14 evidence have to be admissible for consideration by the Court.” Minute Or., ECF No. 600. The
 15 Court cited to *Sali v. Corona Regional Medical Center*, in which the Ninth Circuit ruled that the
 16 “manner and degree of evidence required at the preliminary class certification stage is not the same
 17 as at the successive stages of the litigation,” and that class-certification orders may be “amended
 18 before final judgment.” 889 F.3d 623, 631 (9th Cir.), *superseded by*, 909 F.3d 996 (9th Cir. 2018).

19 After holding a multi-day evidentiary hearing in 2019, the Court discussed Zuffa’s motion
 20 to exclude in an August 2023 order denying in-part and granting in-part class certification. Class
 21 Cert. Or., ECF No. 839. The Court characterized Zuffa’s *Daubert* challenges as attacking
 22 Dr. Singer’s choice to apply regression analysis to “a set of facts in a new market or industry,”
 23 which the Court ruled “does not alter or undermine the generally accepted nature of their
 24 methodological techniques.” *Id.* at 12-15. The Court also ruled that “at this stage” (i.e., class
 25 certification) concerns “about the categorization or definitions of data Dr. Singer used” and his
 26 variable choices go to “matters of weight and probative value for a jury to evaluate,” not to
 27 admissibility. *Id.* at 51 (citation omitted). With respect to future stages, the “Court reiterate[d]
 28

1 that its findings in this order are not meant to be dispositive as to any factual dispute beyond class
2 certification.” *Id.* at 21 n.21.⁵

3 As to Dr. Singer’s use of revenue share for the dependent variable in his regressions, the
4 Court determined this was “an appropriate proxy” for estimating the theoretical compensation that
5 labor would receive in a competitive market, which in economic verbiage is known as marginal
6 revenue product or “MRP.” *Id.* at 49 n.42, 52-54. The Court found this novel approach was
7 justified because this industry is “unique in several respects,” including that the “fighters,
8 themselves, are the product,” there was a large amount of “event-level data” available, and
9 compensation for boxers is “guaranteed as a percentage of event revenue.” *Id.* at 54-56. The Court
10 also cited business documents that listed fighters’ wages as a percentage of revenue, and concluded
11 that Prof. Topel and another UFC expert, Prof. Oyer,⁶ have referred to wage share in some writings
12 about sports industries. *Id.* at 54-55.

13 As to Zuffa’s criticisms of the weighting Dr. Singer applied to his foreclosure share, the
14 Court found those arguments did not “fundamentally or substantively undermine the reliability
15 and explanatory effect of Plaintiffs’ modeling,” and the Court was “not persuaded that they defeat
16 class certification.” *Id.* at 59.

17 **Recent Developments:** Several recent developments relating to the law on evaluating
18 expert testimony and the reliability of Dr. Singer’s analyses put a finer point on Zuffa’s 2018
19 arguments, and confirm that Dr. Singer’s impact opinions cannot be presented to a jury.

20 _____
21 ⁵ In a November 29, 2023 meet and confer regarding a pretrial schedule, counsel for plaintiffs
22 took the position that the Court’s Class Certification Opinion denied Zuffa’s prior motion to
23 exclude Dr. Singer’s opinions. The Order concluding the Class Certification Opinion, however,
24 does not include a denial of that motion. *See* Class Cert Or. at 79-80. Furthermore, the Court’s
25 statements on the docket and in the Class Certification Opinion indicate that the Court’s discussion
26 of the motion to exclude was for class-certification purposes, not the merits stage. *See supra* pp.5-
27 6; *see also* Class Cert. Or. at 21 n.21 (“When the Court indicates here that Plaintiffs or Defendant
28 have ‘established’ a particular fact or position, this simply means that they have satisfied the
necessary legal threshold in the context of determining class certification as set forth in *Olean*.”).

⁶ Professor Oyer is the Fred H. Merrill Professor of Economics at Standard University’s
Graduate School of Business. He is a Research Assistant at the National Bureau of Economic
Research, and was the Editor-in-Chief of *The Journal of Labor Economics*. Professor Oyer
provided opinions in this case on the economically-accepted methods of evaluating compensation,
including in allegedly monopsonized markets, and assessed Dr. Singer’s use of fighter pay as a
percentage of revenue, among other analyses and opinions. *See* Decl. Ex. 23, OR1 ¶¶ 1, 5.

1 First, the U.S. Supreme Court ordered an amendment to Federal Rule of Evidence 702
 2 effective December 1, 2023.⁷ The amendment “is not a sea change but rather an amplification of
 3 existing FRE 702 standards.” *Google Play Store*, 2023 WL 5532128, at *5. The amendment
 4 “clarifies that an expert witness’s opinion testimony is admissible” only if “the proponent
 5 demonstrates to the court that it is more likely than not that the proposed testimony satisfies” all
 6 elements of Rule 702, including that the testimony “is based on sufficient facts or data” and “is the
 7 product of reliable principles and methods.” *Id.* (citation omitted). The amendment also refines
 8 the last Rule 702 element (Rule 702(d)), to require that an expert opinion “reflects a reliable
 9 application of the principles and methods to the facts of the case.” *Id.* at *5 (citation omitted).

10 This amendment arose because the Advisory Committee on Evidence Rules detected a
 11 “pervasive problem” of courts delegating to the jury the judicial responsibility of critically
 12 screening expert testimony. *Sardis v. Overhead Door Corp.*, 10 F.4th 268, 283-84 (4th Cir. 2021)
 13 (quoting Advisory Comm. on Evidence Rules, Agenda for Committee Meeting 17 (Apr. 30,
 14 2021)). Because “expert evidence can be both powerful and quite misleading,” *Daubert v. Merrell*
 15 *Dow Pharmaceuticals*, 509 U.S. 579, 595 (1993) (quotation omitted), Rule 702 imposes a “special
 16 obligation” on trial courts to act as a “gatekeeper” of expert testimony, *Kumho Tire Co. v.*
 17 *Carmichael*, 526 U.S. 137, 147 (1999). The “proper exercise of that gatekeeping function is
 18 critically important.” *Jinro Am. Inc. v. Secure Invs.*, 266 F.3d 993, 1005 (9th Cir.), *amended on*
 19 *denial of reh’g*, 272 F.3d 1289 (9th Cir. 2001). But as the Advisory Committee explained,
 20 “unfortunately many courts have held that the critical question of the sufficiency of an expert’s
 21 basis [for his testimony], and the application of the expert’s methodology, are generally questions
 22 of weight and not admissibility.” *Sardis*, 10 F.4th at 284. The amendment “reject[s]” that
 23 “incorrect application of Rules 702 and 104(a),” *id.*, and “emphasize[s] that each expert opinion
 24 must stay within the bounds of what can be concluded from a reliable application of the expert’s
 25 basis,” Proposed Am. to Fed. R. of Evid. 106, 615, & 702, 344 F.R.D. 850, 857-58 (Oct. 19, 2022).

26 Second, several courts have recently found Dr. Singer’s regression analyses and economic
 27 modelling inadmissible because he committed the same types of errors that Zuffa and its experts

28 ⁷ See Decl. Ex. 20, Letter, U.S. Supreme Court (Apr. 24, 2023).

1 identify here. The most recent example was a ruling in *In re Google Play Store Antitrust*
 2 *Litigation*, just weeks after this Court’s class-certification order, where the court excluded
 3 Dr. Singer’s economic opinions at the merits stage, despite previously relying on them for class-
 4 certification purposes. 2023 WL 5532128 (N.D. Cal. Aug. 28, 2023). In *Google Play Store*, the
 5 consumer-plaintiffs proffered Dr. Singer to support their claims that Google illegally monopolized
 6 the alleged Android-device app distribution market, causing them to be overcharged for apps. *Id.*
 7 at *1. The “critical element” in Dr. Singer’s overcharge analysis at both class certification and the
 8 merits stage was a “pass-through” formula that he opined could “quantify the portion of the
 9 supracompetitive cost imposed on developers by Google that was ‘passed through’ to, or more
 10 aptly, paid by, consumers.” *Id.* at *2. Dr. Singer’s pass-through formula relied on a “logit model”
 11 to approximate the demand for apps sold in the Google Play Store. *Id.* at *3.

12 After the court relied on Dr. Singer’s impact opinion at class certification, a new expert,
 13 Dr. Gregory Leonard, “took a fresh look” at Dr. Singer’s opinions at the merits stage. *Id.* at *4.
 14 Dr. Leonard did not dispute that logit had been validated “in the peer-reviewed economics
 15 literature,” and was “widely used by economists” to model demand. *Id.* at *5-6. But as
 16 Dr. Leonard explained, reliance on logit requires that “all goods in the market where demand is
 17 being studied are substitutes of one another in proportion to their share of that market.” *Id.*
 18 Dr. Singer failed to confirm this condition existed in the market he was studying and also failed to
 19 “compare the ‘fit’ of the logit model with ‘that of an alternative demand model.’” *Id.* at *9.
 20 Dr. Leonard, by contrast, showed that many apps being sold alongside each other in the Google
 21 Play Store clearly were not substitutes, such as language-learning apps and plant-identification
 22 apps. *Id.* at *7. The court found that Dr. Leonard’s opinions “put a much finer point” on flaws in
 23 Dr. Singer’s model and demonstrated Dr. Singer was using “the logit model in an overly simple
 24 way,” based on an “unproven assumption,” which did “not give the jury a sound basis on which to
 25 make a reasoned and reasonable judgment about antitrust impact and damages.” *Id.* at *7-9.

26 The *Google Play Store* decision is the most recent example of a court excluding
 27 Dr. Singer’s economic opinions, but it follows a growing crowd of courts rejecting his opinions as
 28 unsuited for presentation to a jury. For example, in 2021, after this Court’s class-certification

1 hearing, a court rejected Dr. Singer’s opinions in a labor monopsony case because he committed
 2 “a methodological flaw” rendering his models “unreliable” and his estimates “inflated” in favor of
 3 plaintiffs. *Conrad v. Jimmy John’s Franchise*, 2021 WL 718320, at *16-19 (S.D. Ill. Feb. 24,
 4 2021). Less than two months later, another court found Dr. Singer had made “untenable
 5 assumptions,” and excluded his model as a result. *In re MacBook Keyboard Lit.*, 2021 WL
 6 1250378, at *5 (N.D. Cal. Apr. 5, 2021). And a year earlier, a court excluded Dr. Singer’s
 7 “qualitative” analysis of whether the challenged conduct was anticompetitive because he merely
 8 relied on two sources from antitrust agencies to assess competitive impact, which he lacked
 9 “scientific, technical, or other specialized knowledge” to do. *In re Capacitors Antitrust Litig.*,
 10 2020 WL 870927, at *2 (N.D. Cal. Feb. 21, 2020). There are even more. In 2017, Dr. Singer
 11 offered two opinions that were “contrary to the record” and “contrary to the law” (in the case of
 12 one opinion) and based on assumptions with “no rational or legal basis” (in the case of the
 13 second)—the court excluded both. *Apotex, Inc. v. Cephalon, Inc.*, 321 F.R.D. 220, 236, 237 (E.D.
 14 Pa. 2017). In 2015, a court excluded Dr. Singer’s opinions because “his analysis d[id] not reliably
 15 support his conclusion.” *Kamakahi v. Am. Soc’y for Reprod. Med.*, 305 F.R.D. 164, 179–82 (N.D.
 16 Cal. 2015). And in 2014, a court found Dr. Singer’s opinion “legally deficient” because he relied
 17 on “irrelevant” data. *In re Photochromic Lens Antitrust Litig.*, 2014 WL 1338605, at *24-25 (M.D.
 18 Fla. Apr. 3, 2014). Even more cases have criticized Dr. Singer’s opinions and found them
 19 unreliable or unsuitable for a jury, even if not expressly excluding them.⁸

20 A third development is that Dr. Leonard has now evaluated aspects of Dr. Singer’s models
 21 and found flaws similar to the errors that led the court to exclude Dr. Singer’s opinions in *Google*
 22 *Play Store*.⁹ Dr. Leonard did not seek to re-do the work completed by Zuffa’s other experts. Decl.

23 ⁸ See, e.g., *Mazda v. Carfax*, 2016 WL 7231941, at *12-14 (S.D.N.Y. Dec. 9, 2016), *aff’d*, 726
 24 F. App’x 66 (2d Cir. 2018) (holding that “no reasonable jury could rely” on “Singer’s foreclosure
 25 finding”); *In re Cox Enters., Inc. Set-Top Cable Television Box Antitrust Litig.*, 2011 WL 6826813,
 at *12-16 (W.D. Okla. Dec. 28, 2011) (expressing doubts on Dr. Singer’s analysis).

26 ⁹ Dr. Leonard earned a Ph.D. in economics from the Massachusetts Institute of Technology. He
 27 has served as an assistant professor at Columbia University, as the Vice Chair for Economics of
 the Board of Editors of the *Antitrust Law Journal*, and has given invited lectures on antitrust issues
 28 at the Federal Trade Commission, the U.S. Department of Justice, the Directorate General for
 Competition of the European Commission, the Fair Trade Commission of Japan, and China’s
 Supreme People’s Court and Ministry of Commerce. Decl. Ex. 27, Leonard ¶¶ 2-6.

Ex. 27, Leonard ¶ 7 n.1. Instead, Dr. Leonard analyzed whether Dr. Singer’s model was a reliable method of answering the key question of whether the challenged contracts injured any individual fighter. *Id.* ¶ 7. As described below and in his accompanying declaration, Dr. Leonard found, unambiguously, that the impact regression cannot answer that question. *See, e.g., id.* ¶ 9.

As Dr. Leonard explained, it should be undisputed that Dr. Singer’s impact regression attempts to measure only an average impact across all fighters. *Id.* ¶¶ 12-17. The unspoken assumption by Dr. Singer, then, is that the challenged contracts must have impacted every fighter identically—because the model produces only one impact measure (or “coefficient”). *Id.* ¶ 15. But results from both a generally accepted statistical test, and Dr. Singer’s own regression (if permitted to estimate different foreclosure effects for individual fighters), reject the assumption that every fighter’s compensation-as-a-share-of-revenue was similarly affected. *Id.* ¶¶ 18-21. In fact, allowing Dr. Singer’s own regression to show effects for individual fighters (instead of lumping the effect together into an average), shows that for over 80% of fighters, their compensation-as-a-share-of-revenue *did not* decrease a statistically significant amount as foreclosure share increased. *Id.* ¶ 19, Fig. 1.¹⁰ Thus, even using Dr. Singer’s preferred revenue-share measure, foreclosure-share measure, and regression, no anticompetitive impact is observed for the vast majority of individual fighters. *Id.* ¶¶ 18-21, Figs. 1, 2.

Dr. Leonard further explained that it was unreasonable for Dr. Singer to have failed to perform this check. Economic literature on theories of harm from exclusive contracts teaches that any impact is likely to be inconsistently felt by the various dealers (e.g., the fighters in this case). *Id.* ¶¶ 10-11. Accepted checks for identical impact are readily available. *Id.* ¶¶ 14, 19 & n.20. And the “compensation structure” and “common factors” regressions Dr. Singer performed to try to show similar impact indirectly (1) did not evaluate impact from *foreclosure share*; and (2) did not show a shared effect across individuals anyway. *Id.* ¶¶ 24-31.

As the court did in *Google Play Store*, this Court should consider Dr. Leonard’s assessment, and other recent developments, when evaluating if Dr. Singer’s impact regression is

¹⁰ This finding is robust across the tracked and ranked input markets that Dr. Singer utilizes, as well as the headliner submarket. *See* Decl. Ex. 27, Leonard Fig. 1.

1 qualified to be the first model ever presented to a federal jury intended to prove that contractors’
 2 compensation growth not keeping pace with a business’s revenue growth is anticompetitive harm.

3 **ARGUMENT**

4 Dr. Singer’s opinions about antitrust impact and damages, flowing from his “impact”
 5 regression, do not satisfy the requirements of Federal Rule of Evidence 702, especially given the
 6 guidance of the Supreme Court and the drafters of the amendment to Rule 702. The conclusions
 7 that Dr. Singer draws from his regression are not the product of reliable principles and methods,
 8 and do not reflect the reliable application of such principles and methods to the facts of this case.

9 **I. Opinions Relying On Multivariate Regressions Still Must Satisfy Rule 702**

10 Zuffa takes no issue with the statistical method of multivariate regression analysis. When
 11 properly specified, a regression analysis can be informative of impact and damages, and the
 12 regressions that Zuffa’s experts have run show that neither occurred in this case. But as the Ninth
 13 Circuit has made clear, there is no “blanket approval to the introduction of all evidence derived
 14 from multiple regression analyses.” *Penk v. Or. State Bd. of Higher Educ.*, 816 F.2d 458, 464-65
 15 (9th Cir. 1987). Regressions may be excluded when they are used to draw inferences that the
 16 regressions are not “validate[d]” to support, *Google Play Store*, 2023 WL 5532128, at *8, or when
 17 they are based on an assumption that “is not factually accurate” or on a “misconception,” *In re*
 18 *MacBook Keyboard Litigation*, 2021 WL 1250378, at *4. And regressions may be excluded when
 19 they rely on a “methodological flaw.” *Jimmy John’s Franchise*, 2021 WL 718320, at *18-19.

20 These three examples come from courts that excluded *Dr. Singer’s regression analyses* in
 21 just the time since the parties completed the class-certification briefing. There are many other
 22 scenarios when an “expert ‘may employ this reliable methodology in an unreliable way.’” *Id.* at
 23 *16 (quoting Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust*
 24 *Principles and Their Application* ¶ 399 (5th ed. 2020)); *see, e.g., In re LIBOR-Based Fin.*
 25 *Instrument Antitrust Litig.*, 299 F. Supp. 3d 430, 559 & n.136 (S.D.N.Y. 2018) (“It also bears
 26 repeating that the acceptance of regressions as a statistical method generally does not imply that
 27 all regressions will be admissible under *Daubert*.”).

II. Dr. Singer’s Model Does Not Measure Compensation In A Reliable Way

The first methodological flaw in Dr. Singer’s impact analyses is that his model does not reliably measure compensation paid to fighters for several reasons, including (1) it does not measure compensation at all (nor does it attempt to); (2) the standard compensation-assessment measure, and how UFC fighters were actually compensated, shows no impact; (3) the proxy for compensation that Dr. Singer uses has never been accepted by a court as a reliable indicator of anticompetitive impact; (4) the article Dr. Singer relied upon comes from a fraudulent journal; (5) the proxy cannot distinguish between competitive and anticompetitive conduct; and (6) the model does not account for obvious non-fighter drivers of event revenue.

A. The Model Does Not Measure Actual Compensation

Plaintiffs’ theory of harm is that Zuffa’s fighters would have received more actual compensation in the absence of Zuffa’s contracts, not that they would have received a higher “wage share.” CC1 Hrg. Tr. at 122:2-7, ECF No. 724 (“Q. And if UFC had monopsony power, what would that mean for UFC fighters? What would we see in the data? A. Well, what we would see is a wage level that wasn’t competitive. . . .”). This is intuitive because, as Prof. Topel explained, “workers care about the dollar value of their compensation, not compensation as a share of their employer’s revenue.” Decl. Ex. 21, TR1 ¶ 140. By failing to even attempt to measure any correlation between the challenged conduct and actual compensation, Dr. Singer’s model does not fit plaintiffs’ theory of damages or the facts of this case, and should be excluded. *See In re MacBook Keyboard Litig.*, 2021 WL 1250378, at *4 (excluding Dr. Singer’s opinion because his “misconception” caused his opinions to “not accurately relate to Plaintiffs’ theory of damages in this case”).

B. Following Generally Accepted Principles Results In No Impact

The generally accepted method of attempting to calculate harm to labor compensation from monopsonization is to measure the challenged conduct’s effect *on actual compensation*. *E.g., In re High-Tech Emp. Antitrust Litig.*, 985 F. Supp. 2d 1167, 1207-08 (N.D. Cal. 2013). Just two years ago, Dr. Singer employed that approach to test monopsony impact on deli workers allegedly harmed from “no-poach” clauses. *Jimmy John’s Franchise*, 2021 WL 718320, at *2-3. Dr. Singer

1 relied upon a regression to compare “the compensation that each Class Member actually received
2 to the compensation they would have received in the absence of the No-Poach Provision.” *Id.*¹¹

3 Following the generally accepted method in this case (using Dr. Singer’s own model, but
4 with actual compensation) results in a finding of no impact. Decl. Ex. 21, TR1 ¶¶ 146-48 & Ex. 13.
5 No expert has produced a model in this case that shows any negative effect on fighters’ actual
6 compensation as a result of the challenged conduct.¹² If Dr. Singer’s model reliably fit the facts
7 of this case, at a minimum it should produce consistent results when using compensation, but it
8 does not. *See id.* ¶ 149; CC2 Hrg. Tr. at 197:8-12, ECF No. 726 (“[I]f variation in foreclosure
9 share is a measure of variation in monopsony power that affects wages, then a higher foreclosure
10 share ought to be associated with a lower wage within the context of their model. It doesn’t
11 happen.”). Dr. Singer’s failure to “compare the ‘fit’” of his proffered model with “that of an
12 alternative,” generally accepted model (a model he has endorsed elsewhere), is grounds for
13 exclusion, just as it contributed to the recent exclusion of his opinions in *Google Play Store*. 2023
14 WL 5532128, at *9.

15 **C. No Court Has Ever Accepted This Method Of Using Revenue Share**

16 The problem is not limited to Dr. Singer employing a model that is different from the
17 generally accepted approach; the problem is also that the method he selected is unprecedented in
18 monopsony antitrust litigation. No other court has ever approved this type of use of revenue share.
19 And there are important reasons why no court should, including the fact that economics does not
20 predict that companies should or will pay labor a defined share of revenues, Decl. Ex. 21, TR1
21 ¶ 127; Decl. Ex. 23, OR1 ¶ 39, and “[c]ourts are ill suited ‘to act as central planners, identifying
22 the proper price, quantity, and other terms of dealing,’ *Pacific Bell Telephone Co. v. Linkline*
23 *Communications*, 555 U.S. 438, 452 (2009) (citation omitted). Thus, Amended Rule 702 confirms
24 that trials should not be the testing ground for advancing novel disciplines and methods of
25

26 ¹¹ In that case, Dr. Singer’s regression was still excluded because of his incorrect assumptions
about the data. *See Jimmy John’s Franchise*, 2021 WL 718320, at *18-19.

27 ¹² Dr. Singer has not opined that it is impossible to apply a model that follows the generally
28 accepted approach of measuring actual compensation in this case. A model following the wage-
measurement approach, if properly specified, could still account for the fact that wages were
increasing over time, for example. CC2 Hrg. Tr. at 132:18-136:9; 197:8-12, ECF No. 726.

1 regression analysis. *See Sardis*, 10 F.4th at 282-84 (finding motivation for Rule 702 amendment
 2 in the “pervasive problem” of courts holding that questions of the “sufficiency of basis and reliable
 3 application of principles and methods” were issues “of weight for the jury”); *United States v.*
 4 *Tranowski*, 659 F.2d 750, 757 (7th Cir. 1981) (“The trial court should not be used as a testing
 5 ground for theories supported neither by prior control experiments nor by calculations with indicia
 6 or reliability.”). That approach would flip the court’s gatekeeping responsibility on its head by
 7 having courts serve as front-runners of fringe theories and deeming them reliable if a jury accepts
 8 them. Rule 702 requires the opposite, as lay jurors are not expected to weed out unreliable
 9 methodologies or to be capable of doing so—that is the Court’s role, as the amendments to Rule
 10 702 make clear. *Sardis*, 10 F.4th at 283-84. An economic method should be debated, tested, and
 11 generally accepted in academic discourse before it is presented as a reliable methodology in a court
 12 as a basis for liability because “[l]aw lags behind science; it does not lead it.” *In re Mirena Ius*
 13 *Levonorgestrel-Related Pros. Liab. Litig. (No. II)*, 341 F. Supp. 3d 213, 270-71 (S.D.N.Y. 2018)
 14 (excluding expert’s “theory of causation [that] would invite the jury to guess as to the validity of
 15 a novel and untested theory based essentially on his say-so”); *In re Young Broad. Inc.*, 430 B.R.
 16 99, 127 (S.D.N.Y. 2010) (excluding testimony based on method that had not “been tested or relied
 17 upon by other experts,” “subjected to peer review or discussed in any publication,” or “employed,
 18 discussed, [or] generally accepted in any academic or professional community”). But plaintiffs
 19 have never identified a single scholarly article promoting the use of revenue share to show an
 20 anticompetitive effect, where using actual compensation in the same model shows no
 21 anticompetitive effect.¹³

22 The argument that in MMA “the fighter is the product,” does not justify this new and
 23 unsubstantiated approach. Class Cert. Or. at 49. The MMA event is literally the product, as fans

24
 25 ¹³ Professors Topel and Oyer were asked at the class-certification hearing if there was any
 26 economics literature using revenue share to “measure the effects of a monopsony” and they said
 27 there was no such published literature. CC2 Hrg. Tr. at 247:7-15, ECF No. 726 (zero regressions
 28 with revenue share in the literature to measure the effects of monopsony power); CC5 Hrg. Tr. at
 96:16-19, ECF No. 741 (articles “never run a regression the way Singer did, never”). Plaintiffs
 failed to rebut this testimony, only asking Dr. Singer about published articles on wage share and
 not asking him about published articles promoting the use of wage share “to measure the effect of
 monopsony.” CC3 Hrg. Tr. at 149:3-6, ECF No. 730.

do not buy tickets to see a single fighter stand alone in the Octagon. Even Dr. Singer acknowledged that “television distributors are interested in Zuffa producing high-quality *events*,” and the “precise identities” of individual fighters is “less critical than Zuffa’s offering generic, top-ranked Fighters who are competitive[ly] matched and effectively promoted.” SR1 ¶ 284. But even if the fighter was the “product,” that does not explain diverging from generally accepted practices into unsubstantiated theories, as even monopsony cases where the buyer allegedly underpaid for the “product” use impact regressions testing the actual amount paid (not price as a percent of revenue). *See, e.g., Been v. O.K. Indus., Inc.*, 398 F. App’x 382, 386, 397 (10th Cir. 2010) (affirming analysis of monopsony impact based on prices paid to poultry farmers, not prices as a percentage of the buyer’s revenues).

D. Dr. Singer Relied On Fraudulent Evidence In Lieu of Accepted Methods

The fact that Dr. Singer relied on a falsified journal as a basis for his divergence from generally accepted principles further confirms that his methodology lacks sufficient reliability. Dr. Singer admitted that he arrived at using revenue share as a proxy for measuring fighters’ marginal revenue product, not from testing the relative revenue contributions by fighters versus Zuffa’s investments, but instead by relying on what he thought was an academic article. CC2 Hrg. Tr. at 95:6-15, ECF No. 726 (discussing article McGowan & Mahon, *Demand for the Ultimate Fighting Championship: An Econometric Analysis of PPV Buy Rates*, J. of Bus. & Econ. (June 2015)); Decl. Ex. 26, Singer Dep. at 118:22-119:24.¹⁴ That article is from a “journal” deceptively named the *Journal of Business and Economics* to mislead authors and readers to believe it is the legitimate publication, *The Journal of Economics and Business*, a known deceptive and misleading practice. *See F.T.C. v. OMICS Grp., Inc.*, 302 F. Supp. 3d 1184, 1191 (D. Nev. 2017) (part of deceptive scheme involved the use of “names that are nearly identical to other respected journals”). The former is not a legitimate academic journal, but rather the product of an academic vanity press, the Academic Star Publishing Company. *See* ECF No. 743-11 (McGowan & Mahon article). Academic conferences have posted warnings about Academic Star’s “phishing scam” where it

¹⁴ This article is publicly available at ECF No. 743-11, and was submitted as JCCX72 during the class certification hearing.

1 spams academic conference attendees seeking submissions and then demands a \$50 per page
 2 publishing fee.¹⁵ This pay-to-play journal boasts no standard metric of journal quality,¹⁶ and is not
 3 cataloged in any libraries worldwide (except for one in Malaysia).¹⁷ Its website promises a 3-4
 4 week “peer review” process and has an FAQ section that begins each of five identical pages: “Core
 5 values: Guangzhou love Bosch help.”¹⁸ Reliance on an article that was a fraudulent sham requires
 6 exclusion of Dr. Singer’s use of fighter share as a proxy for MRP.

7 **E. Revenue Share Cannot Distinguish Legal From Illegal Conduct**

8 At the class certification hearing, Professors Topel and Oyer explained that in standard
 9 economics, a regression measuring an effect on the fighter share of event revenues could not
 10 distinguish a competitive market or a market with a legal monopsony from one with
 11 anticompetitive restraints because a rise in revenue in either would decrease the fighter share of
 12 revenue. CC2 Hrg. Tr. at 105:6-19, 238:23-239:3, ECF No. 726; CC5 Hrg. Tr. at 99:8-21, ECF
 13 No. 741. Dr. Singer did not respond to this testimony. Thus, it is undisputed that under accepted
 14 economic principles, Dr. Singer’s regressions cannot prove that a declining fighter share is linked
 15 to the challenged contractual clauses. This also requires exclusion of Dr. Singer’s opinions. *See*
 16 *Williamson Oil v. Philip Morris*, 346 F.3d 1287, 1323 (11th Cir. 2003) (affirming exclusion of
 17 expert opinion that “could not have aided a finder of fact to determine whether appellees’ behavior
 18 was or was not legal” because “he did not differentiate between legal and illegal pricing behavior”).

19 **F. The Model Does Not Account For Major Revenue And Compensation Drivers**

20 Dr. Singer’s model is also unreliable and should be excluded because it fails to account for
 21 a major driver of event revenues: Zuffa’s investments to promote, produce, and present those very

23 ¹⁵ *See, e.g.*, ABAI Phishing Scam Alert re: Academic Star Publishing Company (accessed on
 September 12, 2019), available at ECF No. 743-12.

24 ¹⁶ *See* Decl. Ex. 28, SCImago Journal & Country Rank (accessed Nov. 30, 2023). The SCImago
 25 Journal Rank is a recognized means to measure journal rankings. *See OMICS Grp.*, 374 F. Supp.
 3d at 1017.

26 ¹⁷ *See* Decl. Ex. 29, WorldCat, Journal of Business and Economics (accessed Dec. 1, 2023),
<https://search.worldcat.org/title/953673111>.

27 ¹⁸ *See* Decl. Ex. 30, Academic Star Publishing Webpage, FAQ (accessed Nov. 30, 2023),
<http://www.academicstar.us/ArticleShow.asp?ArtID=378>. By contrast, a legitimate “peer review
 28 process typically takes several months.” *F.T.C. v. OMICS Grp.*, 374 F. Supp. 3d 994, 1003 (D.
 Nev. 2019).

1 same events. *See In re Live Concert Antitrust Litig.*, 863 F. Supp. 2d 966, 974 (C.D. Cal. 2012).
 2 It is well documented (and intuitive) that Zuffa’s expenses contribute to event revenues. Decl. Ex.
 3 21, TR1 ¶¶ 133-40 & App. A; Decl. Ex. 23, OR1 ¶ 36. Even Dr. Singer acknowledges that, “as a
 4 matter of theory,” Zuffa’s non-compensation expenses, such as marketing, promotion, production,
 5 and other factors could influence event revenues, Decl. Ex. 26, Singer Dep. at 119:8-121:21, and
 6 that “[t]elevision distributors are interested in Zuffa producing high-quality events that will attract
 7 viewers,” Decl. Ex. 24, SR1 ¶ 284. But Dr. Singer failed to include *any* measure of Zuffa’s event
 8 expenses in his initial model. *Id.* ¶ 185, Tabs. 4-5 (listing regression variables). The exclusion of
 9 these revenue drivers is inexplicable, as it eliminates any possibility for the model to estimate that
 10 Zuffa’s investments and efforts contributed to increased revenue, and instead attributes any gains
 11 from those investments solely to the athletes.

12 Courts exclude opinions when there is “some indication that the excluded variables would
 13 have impacted results.” *Live Concert Antitrust Litig.*, 863 F. Supp. 2d at 974. Here, Dr. Singer’s
 14 own analysis provides proof of that impact on results (and Zuffa’s expert confirmed it as well).
 15 Attempting to correct for the exclusion of event expenses, Dr. Singer presented a new model during
 16 the class certification *Daubert* process that attempted to control for some event “promotion” cost,
 17 which is a subset of non-compensation event costs, and the changes to his regression were
 18 substantial. Decl. Ex. 22, TR3 ¶ 19. This partial accounting for Zuffa’s costs caused the coefficient
 19 on foreclosure share for Dr. Singer’s ranked market (the measure he uses for damages) to *decrease*
 20 *by nearly half*. *Id.* ¶ 19; *compare* Decl. Ex. 24, SR1 Tab. 6 (original coefficient of -0.0427), *with*
 21 Decl. Ex. 25, SR3 Tab. A2 (revised coefficient of -0.0231). That fall-off comes from accounting
 22 for just a small portion of Zuffa’s investments to drive event demand. Promotional costs
 23 represented, at most, 28% of event costs (excluding athlete compensation). *Production* costs—the
 24 costs of broadcasting events—were far more substantial, often triple the promotion costs;
 25 production costs could make up more than half of all event costs (excluding athlete compensation).
 26 Decl. Ex. 22, TR3 ¶¶ 17, 18 & Ex. 1.

27 Moreover, Dr. Singer annualized the promotion costs, rather than applying them to his
 28 regression on a per-event basis. This was an indefensible choice because the relationship being

1 studied should have been per-event expenses' effect on per-event revenues. By instead adding
 2 together the entire year's expenses and applying only the average to each event, Dr. Singer
 3 obscured the huge variances in expenses per-event, and how those expenses drive event revenue.
 4 For example, in 2016, Zuffa spent over \$10 million (excluding athlete compensation) on a single
 5 marquee event, which was over 20% of event revenues. *Id.* at Ex. 5. For another 2016 event,
 6 Zuffa spent less than \$2 million, and resulting revenues for that event were much lower. *Id.*
 7 Dr. Singer merely assigned \$1.1 million in promotional costs for both events (the 2016 annual
 8 average), which eliminates the model's ability to attribute different revenue results from different
 9 expenses at each UFC event. *Id.* at Exs. 1, 5. Event-level cost information was available for
 10 promotional expenses, production expenses, and other expenses. Dr. Singer even organized it in
 11 his backup materials. But he did not use it in his analysis. Had he done so, his model would have
 12 estimated no foreclosure effect, as Prof. Topel found when he tested it. *Id.* ¶ 22. This is proof of
 13 the huge—dispositive—way that Dr. Singer's exclusion of Zuffa's expenses per-event "impact[ed]
 14 results" from his regression. *Live Concert Antitrust Litig.*, 863 F. Supp. 2d at 974; *see also*
 15 *Contreras v. City of L.A.*, 656 F.2d 1267, 1273 n.4 (9th Cir. 1981) ("Statistics are not trustworthy
 16 when minor numerical variations produce significant fluctuations."); *Reed Constr. Data v.*
 17 *McGraw-Hill*, 49 F. Supp. 3d 385, 400-04 (S.D.N.Y. 2014), *aff'd*, 638 F. App'x 43 (2d Cir. 2016).

18 Similarly, with respect to fighters' revenue share, Dr. Singer's regression nonsensically
 19 shows *no* relationship between compensation and his variable for a fighter winning a bout (the
 20 "WinFlag" variable), even though Dr. Singer admits that 94% of the time fighters double their
 21 base pay by winning their fights. Decl. Ex. 24, SR1 ¶ 30; Decl. Ex. 26, Singer Dep. at 111:23-
 22 112:17; Decl. Ex. 23, OR1 ¶ 52 & Tab. 1; Decl. Ex. 21, TR1 Ex. 13. Singer's regression also
 23 shows no relationship between variables for Rank and sharing of PPV revenues and fighter share.
 24 Decl. Ex. 21, TR1 ¶149; CC2 Hrg. Tr. at 220:7-15, ECF No. 726. But when the model is adjusted
 25 to instead use actual compensation as the dependent variable, it produces the expected results of
 26 compensation increasing if their rankings improve or if they are entitled to a portion of Zuffa's
 27 PPV revenues. *See* Decl. Ex. 21, TR1 ¶ 149.

III. The Regression’s Key “Foreclosure Share” Variable Does Not Fit

Dr. Singer’s regression is further flawed because the “foreclosure share” variable it relies on to measure antitrust impact does not isolate anticompetitive conduct, and is mismeasured in any event. To show impact, plaintiffs’ “injury must be attributable to an anticompetitive aspect of the practice under scrutiny.” *Big Bear Lodging Ass’n v. Snow Summit, Inc.*, 182 F.3d 1096, 1102 (9th Cir. 1999) (citation omitted). The foreclosure share Dr. Singer utilizes, however, is only a weighted counting of the challenged practice (e.g., 30-month exclusive contracts), without any verification that the practice had any adverse effect on competition. As Dr. Singer explained in deposition, “the regression takes the foreclosure share as an input,” which merely “flows from which market definition and weighting model I use.” Singer Dep. at 39:23-40:3, 40:23-41:8. He *assumes* that any contract capable of being exclusive for thirty months had an adverse effect on competition, even though that is something plaintiffs must instead *prove*, and numerous courts have found exclusive contracts even longer than thirty months had no such negative effects.¹⁹ “Simply put, an expert does not assist the trier of fact” when he “starts his analysis based upon [an] assumption” that is “the very question that he was called upon to resolve.” *Clark v. Takata Corp.*, 192 F.3d 750, 757 (7th Cir. 1999). As other courts have found when Dr. Singer’s testimony relied on assumption rather than verification, this is grounds to exclude his opinions based on “foreclosure share.” *See, e.g., Carfax*, 2016 WL 7231941, at *13 (rejecting Dr. Singer’s foreclosure conclusions, in part, because “Dr. Singer assumed that all of the ‘exclusive’ CPO agreements foreclosed competition”); *Apotex, Inc. v. Cephalon, Inc.*, 321 F.R.D. 220, 235-37 (E.D.

¹⁹ *See, e.g., Fraser v. Major League Soccer*, 284 F.3d 47, 68-69 (1st Cir. 2002) (holding that “a garden variety exclusive dealing arrangement limited to three years” is “not inherently unlawful”); *Fleer Corp. v. Topps Chewing Gum, Inc.*, 658 F.2d 139, 142, 144, 153-54 (3d Cir. 1981) (holding that exclusive athlete agreements of five and eight years did not exclude competition under Section 2); *Spinelli v. Nat’l Football League*, 96 F. Supp. 3d 81, 117 (S.D.N.Y. 2015) (“exclusivity periods of no more than three years . . . do not foreclose competition and are not anticompetitive as a matter of law” where the contracts subject to re-bidding). Dr. Singer supports his assumption that the 30-month contracts in this case are exclusionary with only a citation to an antitrust treatise, where the cited section says that “[w]e suggest presumptively that periods of less than one year be approved.” Decl. Ex. 24, SR1 ¶ 172 (citing Areeda & Hovenkamp ¶ 1821d3). Far from saying that all 30-month exclusive contracts are irrefutably, or even presumptively, anticompetitive, the treatise explains that, when there are a large number of “dealers”—which are the fighters in this context—“even contracts with long terms need not be anticompetitive.” Areeda & Hovenkamp ¶ 1821d3.

Pa. 2017) (excluding Dr. Singer’s opinions based on assumption lacking factual support); *King Drug Co. of Florence v. Cephalon*, 2015 WL 12645766, at *6 (E.D. Pa. Dec. 22, 2015) (excluding testimony based on Dr. Singer’s “legal musings” and “legal opinions”); *see also Craftsmen Limousine, Inc. v. Ford Motor Co.*, 2005 WL 3263288, at *7 (W.D. Mo. Dec. 1, 2005) (excluding regression relying on “antitrust indicator” variable where the expert “never analyzes the alleged restraints . . . to determine if they were anticompetitive”), *aff’d*, 491 F.3d 380 (8th Cir. 2007).

Dr. Singer compounds his flawed reliance on foreclosure share by distorting the ratio with a “weight” based on portions of MMA promoters’ average event revenues. *See* Decl. Ex. 24, SR1 ¶ 128. This approach artificially inflates the estimated foreclosure share—and confuses size for anticompetitive conduct. Decl. Ex. 21, TR1 ¶¶ 162, 224. Moreover, relying on event revenues—which are part of the *output* market (e.g., MMA events)—to calculate supposed foreclosure in the *input* market (e.g., fighter services), makes no sense because the exact same fighter, with the exact same rank, would be assigned a higher foreclosure share when fighting for Zuffa than when fighting for any other promoter, merely because Zuffa’s average event revenues were higher than other promoters. *See id.* ¶¶ 221-23 (proving examples of this flaw in the data). In *United States v. Syufy Enterprises*, the Ninth Circuit considered the same gimmick as part of market-share calculations and rejected it because there was not a clear relationship between downstream revenues and upstream market power. 903 F.2d 659, 663-64 (9th Cir. 1990).

The same outcome is even more deserving here because Dr. Singer includes a weight from the output market not only on the foreclosure share variable, but also on the dependent variable revenue-share variable. With event revenue being counted in both the foreclosure share and the revenue share, the automatic effect of Zuffa’s revenues increasing (all else held constant) is for both the foreclosure share to increase and the fighter’s compensation as a percentage of event revenues to decrease. Thus, the regression is hard-wired to produce a negative correlation between foreclosure share and revenue share. Decl. Ex. 21, TR1 ¶¶ 143, 150, 161-67.²⁰ As Prof. Topel

²⁰ For a “submarket” of his fighter services input market limited only to the top 15 ranked fighters by weight class, Dr. Singer weights fighters based on an inverse measure of their rank, rather than by the promoters’ revenue. *See* Decl. Ex. 24, SR1 ¶ 128. Under this weighting, the top-ranked fighter in a weight class is assigned 1,000% more foreclosure share than the tenth-ranked fighter. Dr. Singer applies this inverse-rank measure only to a submarket (not the relevant market) and it

1 explained, “[t]his mechanical negative correlation, rather than being evidence of Zuffa’s
 2 monopsony power, occurs because Dr. Singer included Zuffa’s event revenue on both the left and
 3 right hand side of the regression (as the denominator of the dependent variable and as the weight
 4 that increases the key explanatory variable).” *Id.* ¶ 143. But when the use of revenue-weighting
 5 is removed from foreclosure share (and pre-acquisition Strikeforce bouts are removed), the model
 6 produces no negative correlation between revenue share and the challenged contracts. *Id.* ¶ 225.

7 The combined flaws of weighting foreclosure share by revenue and failing to verify that
 8 foreclosure share isolates anticompetitive effects creates an unacceptable risk that the jury will
 9 make a legally erroneous finding of liability based on permissible conduct. Because Dr. Singer
 10 weights his measure of foreclosure share by the promoter’s revenue, his measure of foreclosure
 11 share is virtually indistinguishable from his calculation of Zuffa’s market share during the class
 12 period.²¹ The regression “finds a relationship between that foreclosure share and the fighters’
 13 wage share controlling for all other things and then the regression is done.” Decl. Ex. 26, Singer
 14 Dep. at 41:9-14. But by failing to verify the anticompetitive effect of foreclosure share, and
 15 allowing for increased revenues to mechanically increase foreclosure share and decrease wage
 16 share, the model is incapable of differentiating between lower compensation arising merely from
 17 Zuffa’s increase in size. That, however, would be an impermissible inference, as it is an
 18 indisputable “basic rule that mere possession of monopoly power and the practice of charging
 19 monopoly prices does not run afoul of § 2.” *John Doe I v. Abbott Labs.*, 571 F.3d 930, 934 (9th
 20 Cir. 2009); *see also* Decl. Ex. 21, TR1 ¶ 139 (“[A]ll that Dr. Singer has shown is that as Zuffa’s

21
 22 is not the basis of his damages estimate, so it is less relevant. *Id.* ¶¶ 1, 128, 162, 251. Nonetheless,
 23 it has no basis in economic literature or the facts of this case, because there is no basis to assume
 24 such dramatic variability in fighter quality among the top 15 fighters in a weight class. *See* Decl.
 Ex. 21, TR1 ¶¶ 228-30.

25 ²¹ Dr. Singer’s calculated foreclosure share during the class period “fluctuated between 91
 26 percent and 98 percent (using the Tracked measure) and between 68 and 90 percent (using the
 27 Ranked measure),” while his calculated market share “fluctuated between 94 and 99 percent (using
 the Tracked measure) and between 71 and 91 percent (using the Ranked measure).” Decl. Ex. 24,
 SR1 ¶¶ 129, 173; *compare id.* at Fig. 1 (market share), *with id.* at Fig. 3 (foreclosure share). The
 28 closeness between Dr. Singer’s calculated foreclosure share and market share derives from his
 conclusion that all UFC fighters’ contracts are exclusive, and “[v]irtually all (about 94 percent) of
 Zuffa’s [promotion and ancillary rights agreements] contain a champion’s clause.” *Id.* ¶¶ 66, 69.

business grew relative to its competition, its revenues grew at a faster rate than the earnings of MMA athletes. This reveals nothing about the Challenged Conduct or its effects.”).

IV. The Regression Does Not Model Impact On Any Individual Fighter

Independent of the flaws with Dr. Singer’s reliance on revenue share and foreclosure share, his impact regression cannot be relied upon to identify the challenged conduct’s impact on any individual fighter, which is the issue at the core of his opinion. *See In re Google Play Story Antitrust Litig.*, 2023 WL 5532128, at *9 (N.D. Cal. Aug. 28, 2023) (excluding Dr. Singer model that “does not give the jury a sound basis on which to make a reasoned and reasonable judgment about antitrust impact and damages”); *In re Pharmacy Benefit Managers Antitrust Litig.*, 2017 WL 275398, at *20 (E.D. Pa. Jan. 18, 2017) (finding “insurmountable *Daubert* fit problem arises from the use of national averages in the expert model since averages cannot demonstrate antitrust impact for individual class members”); *In re NCAA Student-Athlete Name & Likeness Licensing Litig.*, 2013 WL 5979327, at *8 (N.D. Cal. Nov. 8, 2013) (denying class certification where plaintiffs failed to identify “a feasible way to determine which members of the Damages Subclass were actually harmed by the NCAA’s allegedly anticompetitive conduct”).

Although Dr. Singer’s descriptions often omit this fact, Dr. Singer does occasionally acknowledge that his impact regression is only intended to measure an *average* effect, on the *average* of fighters, not the actual effect on any individual fighter’s share of revenue.²² His impact regression produces only a single impact coefficient associated with foreclosure share for each of his relevant markets, not an individual impact coefficient for each fighter. Decl. Ex. 24, SR1 ¶ 187, Tab. 6; Decl. Ex. 27, Leonard ¶¶ 13, 15-16. For his single measure to reflect the impact to individual fighters, Dr. Singer must assume that the conduct identically affected every fighter. Decl. Ex. 27, Leonard ¶¶ 15-17. That is because, if the fighters experienced different effects, then a single average would not reveal how any individual fighter was affected. A simple example

²² *E.g.*, Decl. Ex. 24, SR1 ¶ 187 (“[I]f the Foreclosure Share were to decrease from 90 percent to 80 percent, the Fighter Share for the **average** Fighter would increase by $(0.9-0.8)*(0.0319) = 0.00319$, or about 0.319 percentage points. . . . Given that the **average** Fighter Share is only about 1.2 percent (as seen in Table 5 above), the **average** Fighter’s compensation would increase by about 27 percent (equal to $0.00319/0.012$) if the Foreclosure Share were to decrease from 90 percent to 80 percent.”); *see also* Decl. Ex. 27, Leonard ¶¶ 12-17.

1 makes this clear. If the challenged conduct harmed one fighter (returning a coefficient of -0.04),
 2 but did not harm two fighters (returning coefficients of 0.00 and 0.01), the average effect on the
 3 group would be a negative coefficient of -0.01, even though two fighters were unharmed. *Id.* ¶ 16.

4 There are well-recognized and generally accepted checks to determine if the model
 5 estimates the same impact for each fighter—but Dr. Singer did not perform them. *Id.* ¶¶ 18-19.
 6 Instead, Dr. Singer commits the error that other courts have repeatedly found in his work—he
 7 *assumes* an identical effect; but does so incorrectly. *Id.* ¶¶ 18-19; *see supra* pp.8-9.

8 Because the data was readily available, Dr. Leonard performed a check on the model using
 9 generally accepted statistical tests of Dr. Singer’s implicit assumption. The results unambiguously
 10 show that foreclosure share does not have the same effect on each fighter’s share of revenue. Decl.
 11 Ex. 27, Leonard ¶¶ 19-21, Figs. 1, 2. First, Dr. Leonard performed an F-test for joint
 12 significance—a check that Dr. Singer endorses, but did not apply—to test the hypothesis that the
 13 foreclosure share effects were identical for all fighters.²³ *Id.* ¶ 19 & n.21. The test rejects that
 14 assumption by showing that not allowing foreclosure share to have an effect that varies across
 15 fighters is a flawed approach. *Id.* ¶ 19 n.21. Second, Dr. Leonard affirmatively confirmed that the
 16 effect of foreclosure share varied across fighters by applying Dr. Singer’s own regression, but
 17 allowing for the coefficient on foreclosure to vary for each fighter. *Id.* ¶¶ 19-21, Figs. 1, 2. The
 18 results of this check show that, for more than 80% of fighters, Dr. Singer’s model does not estimate
 19 that the fighter’s share of revenue decreased as foreclosure share increased by a statistically
 20 significant amount. *Id.* ¶ 19, Tab. 1. Thus, because Dr. Singer’s model estimates only one
 21 foreclosure coefficient, and there is no evidence that the majority of fighters were harmed by
 22 increasing foreclosure share, Dr. Singer’s impact regression cannot determine impact to any
 23 individual fighter. *Id.* ¶ 21.

24 The “compensation structure” and “common factors” regressions that Dr. Singer
 25 performed cannot compensate for the flawed impact regression. Dr. Singer’s compensation
 26 structure regression does not even attempt to answer the question of whether a fighter’s

27
 28 ²³ Dr. Singer employs a similar test to see whether the foreclosure share effect was the same for Zuffa fighters and Strikeforce fighters before Zuffa acquired Strikeforce. *See* Decl. Ex. 24, SR1 ¶ 183 n.454; Decl. Ex. 27, Leonard ¶¶ 18-19 n.20.

1 compensation was correlated with foreclosure share. *Id.* ¶ 25. Rather, as Dr. Singer acknowledges,
 2 it attempts to measure whether changes in compensation “broadly” due to any factor are “shared”
 3 across fighters. Decl. Ex. 24, SR1 ¶¶ 228-29. Of course *some* factor might cause a change in all
 4 fighter compensation—general inflation, for example. Decl. Ex. 27, Leonard ¶ 25. But that does
 5 nothing to connect the shared movement to the factor of interest—foreclosure share. As described
 6 above, Dr. Singer could have checked whether individual fighters’ experiences with foreclosure
 7 share were the same, but he does not do so. *Id.* ¶ 26. Moreover, like his impact regression, the
 8 compensation structure regression employed by Dr. Singer is informative, at best, only of the
 9 average rather than the individual. Examining the full set of correlations between pairs of
 10 individual fighters, Dr. Leonard found that approximately half of the 245,000 pairs of fighter
 11 combinations have correlations that are either negative, or are very small (e.g., less than 10%). *Id.*
 12 ¶ 27, Fig. 3. And the average or median compensation correlation for many fighters is less than
 13 zero. *Id.* ¶ 27, Figs. 4, 5. The substantial number of fighters with little or no positive compensation
 14 correlation is inconsistent with Dr. Singer’s claim of a common compensation structure. *Id.* ¶ 27.

15 Dr. Singer’s “common factors regression” fares no better at testing if foreclosure share
 16 impacted any individual fighter. This regression purports to identify “what proportion of the
 17 variation in Bout Class compensation (above and beyond the average) is attributable to common
 18 factors.” Decl. Ex. 24, SR1 ¶ 227. But, incredibly, Dr. Singer *excludes* foreclosure share from the
 19 set of common factors he tested. Decl. Ex. 27, Leonard ¶ 31. By excluding the key variable,
 20 Dr. Singer rendered his common factor regression incapable of testing that variable’s effect on
 21 individual fighters. *Id.* ¶ 31. He also failed to check whether any of the “common factors” tested
 22 actually had the same effect across fighters. *Id.* ¶ 32. When Dr. Leonard applied this approach,
 23 he found that even the three variables with the highest statistical significance within Dr. Singer’s
 24 model did not have the same effect for all fighters. *Id.* ¶ 32.

25 CONCLUSION

26 For the foregoing reasons, Zuffa respectfully requests that the Court exclude from trial, and
 27 consideration at summary judgment, Dr. Singer’s opinions regarding antitrust impact that rely
 28 upon his attempts to show a negative correlation between wage share and foreclosure share.

Dated: December 8, 2023

Respectfully Submitted,

/s/ Christopher S. Yates

WILLIAM A. ISAACSON (*Pro hac vice*)

wisaacson@paulweiss.com

JESSICA PHILLIPS (*Pro hac vice*)

jphillips@paulweiss.com

PAUL, WEISS, RIFKIND, WHARTON &
GARRISON LLP

2001 K Street, NW

Washington, DC 20006

CHRISTOPHER S. YATES (*Pro hac vice*)

chris.yates@lw.com

LATHAM & WATKINS LLP

505 Montgomery Street, Suite 2000

San Francisco, CA 94111

Tel: (415) 395-8095

SEAN M. BERKOWITZ (*Pro hac vice*)

sean.berkowitz@lw.com

LATHAM & WATKINS LLP

330 North Wabash Ave, Suite 2800

Chicago, IL 60611

BRETTE M. TANNENBAUM (*Pro hac vice*)

btannenbaum@paulweiss.com

YOTAM BARKAI (*Pro hac vice*)

ybarkai@paulweiss.com

PAUL, WEISS, RIFKIND, WHARTON &
GARRISON LLP

1285 Avenue of the Americas

New York, NY 10019

LAURA WASHINGTON (*Pro hac vice*)

laura.washington@lw.com

LATHAM & WATKINS LLP

10250 Constellation Blvd, Suite 1100

Los Angeles, CA 90067

DONALD J. CAMPBELL (No. 1216)

djc@campbellandwilliams.com

J. COLBY WILLIAMS (No. 5549)

jcw@campbellandwilliams.com

CAMPBELL & WILLIAMS

700 South 7th Street

Las Vegas, Nevada 89101

Tel: (702) 382-5222

DAVID L. JOHNSON (*Pro hac vice*)

david.johnson@lw.com

LATHAM & WATKINS LLP

555 Eleventh Street NW, Suite 1000

Washington, D.C. 20004

Attorneys for Defendants Zuffa, LLC

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing Motion To Exclude Certain Opinions of Dr. Hal J. Singer was served on December 8, 2023 via the Court's CM/ECF electronic filing system addressed to all parties on the e-service list.

/s/ Christopher S. Yates
Christopher S. Yates of
LATHAM & WATKINS LLP